

new set of claims

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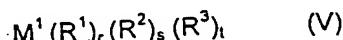
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We claim:

1. A process for preparing a catalyst for olefin polymerization which is obtainable by bringing

5 A) at least one organic transition metal compound,

B) a mixture of at least two different organo metallic compounds of formula (V),



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where

M¹ is an alkali metal, an alkaline earth metal or a metal of group 13 of the Periodic Table,

15 R¹ is hydrogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, halo-C₁-C₁₀-alkyl, halo-C₆-C₁₅-aryl, C₇-C₄₀-arylalkyl, C₇-C₄₀-alkylaryl, C₁-C₁₀-alkoxy or halo-C₇-C₄₀-alkylaryl, halo-C₇-C₄₀-arylalkyl or halo-C₁-C₁₀-alkoxy,

20 R² and R³ are each hydrogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, halo-C₁-C₁₀-alkyl, halo-C₆-C₁₅-aryl, C₇-C₄₀-arylalkyl, C₇-C₄₀-alkylaryl, C₁-C₁₀-alkoxy or halo-C₇-C₄₀-alkylaryl, halo-C₇-C₄₀-arylalkyl or halo-C₁-C₁₀-alkoxy,

r is an integer from 1 to 3

25

and

s and t are integers from 0 to 2, where the sum r+s+t corresponds to the valence of M¹,

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and

C) at least one cation-forming compound

35 into contact with one another, wherein the organic transition metal compound A) is firstly combined with the mixture of the organo metallic compounds B).

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2. A process for preparing a catalyst for olefin polymerization as claimed in claim 1, wherein
D) at least one support
5 is used as further component.

3. A process for preparing a catalyst for olefin polymerization as claimed in claim 1 or 2,
wherein
10 E) at least one Lewis base
is used as further component.

4. A process for preparing a catalyst for olefin polymerization as claimed in any of claims 1 to
15 3, wherein the cation-forming compound is a strong uncharged Lewis acid, an ionic
compound having a Lewis-acid cation, an ionic compound containing a Brönsted acid as
cation or a compound of the aluminoxane type.

5. A process for preparing a catalyst for olefin polymerization as claimed in any of claims 1 to
20 4, wherein the cation-forming compound is obtained during the preparation of the catalyst
by reaction of a compound having at least one functional group containing active hydrogen
with an organometallic compound.

6. A process for preparing a catalyst for olefin polymerization as claimed in claim 5, wherein
25 the compound having at least one functional group containing active hydrogen is a
hydroxyl-containing compound.

7. A process for preparing a catalyst for olefin polymerization as claimed in claim 6, wherein
30 the hydroxyl groups are bound to an element of main group 13, 14 or 15 of the Periodic
Table.

8. The use of a catalyst prepared as claimed in any of claims 1 to 7 for the polymerization of
olefins.

35 9. A catalyst obtainable by a process as claimed in any of claims 1 to 7.

10. A process for the polymerization of olefins using a catalyst as claimed in claim 9.